

<u> APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700007-6</u>

Butt-milling of titanium alleys

#/122/62/000/009/003/003 A006/A101

best material is BK6 M (VK6N) sintered carbide. Optimum grinding angles of the cutter are $r=5\div7^\circ$; $\lambda=5\div10^\circ$; $\alpha=10\div15^\circ$. For cutting VT6 and OT4 alloys with VK6M cutters, the following conditions are recommended: $v=40-60~\rm a/min-s_z=0.05-0.15$ mm/tooth, at a displacement of the mill $\frac{k}{D}=0.05\div0.1$. At the initial stage of cutting, when the cutter is incised into the work piece, the cutting speed should be reduced by about twice in comparison to the speed the last the established process. There are 7 figures and 1 table.

3/122/62/000/009/003/003 A006/A101

AUTHORS:

Komissarov, V. I., Engineer, Mitryayev, K.F., Candidate of Technical

TITLE:

Butt-milling of titanium alloys

PERIODICAL: Vestnik mashinostroyeniya, no. 9, 1962, 68 - 70

Information is given on results of investigatin the suitability of BT 6 (VT6) and OT4 (OT4) titanium alloys for butt milling. The investigation was carried out under the supervision of Professor N. I. Reznikov, Doctor of Technical Sciences at the cutting laboratory of the Kuybyshevskiy aviatsionnyy institut (Kuybyshev Avlation Institute). The testswere made on a horizontal "Ervag" milling machine, A 130 mm diameter cutter was used with blades having sintered carbide or high speed steel plates. The most suitable alloy for the blades was determined by asymmetrical milling of VT6 alloy; the cutter was adjusted in respect to the work piece by a displacement k=6 mm $\left(\frac{k}{D}=0.045\right)$. The tests show that butt milling of titanium alloys VT6 and OT4 with sintered carbides is more efficient than milling with high-speed steel blades (P9K5 (R9K5) and P9K10 (R9K10)). In this case the

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New investigations in the dynamics and thermal ...

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The actual maximums are perhaps 20-25% higher than the recorded maximum means. The single-tooth method provides T readings that not only are closer to the true values, but also permit the thermal-load determination for each individual tooth. The thermal loads on the cutter teeth are not uniform. On several teeth located in the central portion of the lead-in zone, the maximal T's attain 500-600°C even during normal cutting; the use of an effective cooling medium and frequent axial shifts of the milling cutter is of much significance. Good equalization of the thermal load between the individual teeth of a cutter or the application of high-temperature-resistant materials in milling cutters permits a significant increase in the productivity of milling heads through increases in eigher cutting speed or feed. There are 18 figures, 2 tables, and 7 Russian-language Soviet references.

ASSOCIATION: None given.

Card 3/3

New investigations in the dynamics and thermal ... S/792/62/000/000/004/004

with a single tooth-billet hump. Individual oscillograms are shown, also a log-log graph of the mean torque versus feed per revolution, from which a power expression similar to that existing for free cutting can be derived. A correction factor for various steels (function of the necking and the tensile strength) is derived. Similar expressions and correction coefficients are found for both the mean and the maximal torque, the mean peripheral cutting force, and the effective power as functions of the module, the feed, the cutting speed, the number of teeth of the gear being cut (this is a subject of considerable debate between various Soviet authors), the milling-cutter wear, and the depth of milling. A comprehensive formula including all of these correction factors is developed for each of the four milling-process parameters May, Mmax, Pperipheral, and Neff. The single-tooth-cutting investigation afforded means for the experimental study of the load distribution between the separate teeth of a worm-type cutter as a function of the various milling-process parameters. It was established that most of the load devolves on a small group of teeth (5 to 8) located in the central portion of the lead-in zone and that the load on those teeth is 2 to 3 times as high as the mean-load level of all cutting teeth. Investigation of the cutting temperature: The single-tooth-cutting procedure affords a more dependable temperature measurement than the multiple-tooth-cutting procedure, since the socalled maximum temperatures measured in a multi-tooth cutting are no more than maximum means of several cutting elements engaged in different stages of cutting.

S/792/62/000/000/004/004

AUTHOR: Mitryayev, K. F., Engineer. New investigations in the dynamics and thermal phenomenology of gear-TITLE:

Progressivnyye metody proizvodstva zubchatykh koles i ikh tekhnologichnost'. Mosk, gor. nauchno-tekhn. obshch-vo mashinostr. prom. SOURCE:

Moscow, Mashgiz, 1962, 286-302.

The paper describes a new low-inertia electro-inductive torquemeter designed by the author and Dotsent B. A. Kravchenko for a range of up to 40 kg·m and adapted to use in the model-532 gear millers (module 1 to 6); the tests were performed at the Kuybyshev Aviation Institute under the direction of Prof. N. I. Reznikov. The dynamometer consists of a circular rim and a hub mutually connected by a set of thin, elastic, spokes. Two inductive sensors, with a gap that is altered by any torsional rim-versus-hub deformation, form part of two of the arms of an unbalanced a.c. bridge (carrier f 2000 cps). Any resulting e.m.f. is amplified and is registered on film via an MIIO-2 (MPO-2) loop oscillograph. Investigation of the effects of various factors on the mean and maximal torque: Both multi-tooth (ordinary) and single-tooth cutting was done. In multi-tooth cutting the mean torque, the maximum torque for each rack of teeth, and the arithmetic-mean maximum torque for each rack were recorded. Single-tooth cutting was done on special billets

5/122/61/000/002/008/011 A161/A126

AUTHORS:

Mitryayev, K. F., Candidate of Technical Sciences, Komissarov, V. I., Engineer

TITLE:

End milling of EI643 high-strength steel

PERIODICAL:

Vestnik mashinostroyeniya, no. 2, 1961, 55 - 58

TEXT: The article presents the results of an experimental investigation of the machinability of 3M643 (EI643) steel carried out by the authors under supervision of Professor Doctor of Technical Sciences N. I. Reznikov. E1643 steel is a special grade used for critical power machine parts. [Abstracter's note: The steel composition is not given]. Its properties make this steel difficult to cut, and particularly by end milling. Experimental milling has been done on an " 3pear" ("Ervag") horizontal milling machine, with a standard (FOCT 8529-57/GOST 8529-57) end mill 130 mm in diameter, with one or two blades tipped with T15K6 (T15K6) and T30K4 (T30K4) alloy, without coolant. T15K6 alloy tips proved to be better; they withstood about 100 min. cutting, compared to only 30 min with T30K4 tips. There are 7 figures, 1 table and 2 Soviet-bloc references.

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A004/A101

and determine the number of its axial displacements. 4) To increase the productivity of gear milling it is recommended to raise the feed up to 5 mm/rev at outting speeds in the range of 25 - 35 m/min and good cooling. At feeds of 6 - 12 mm/rev and outting speeds of more than 440 m/min it is necessary to equalize the thermal load of the teeth. There are 7 figures and 5 references.

[Abstracter's note: Complete translation]

S/123/61/000/014/024/045 A004/A101

100

AUTHOR:

Mitryayev, K.F.

TITLE:

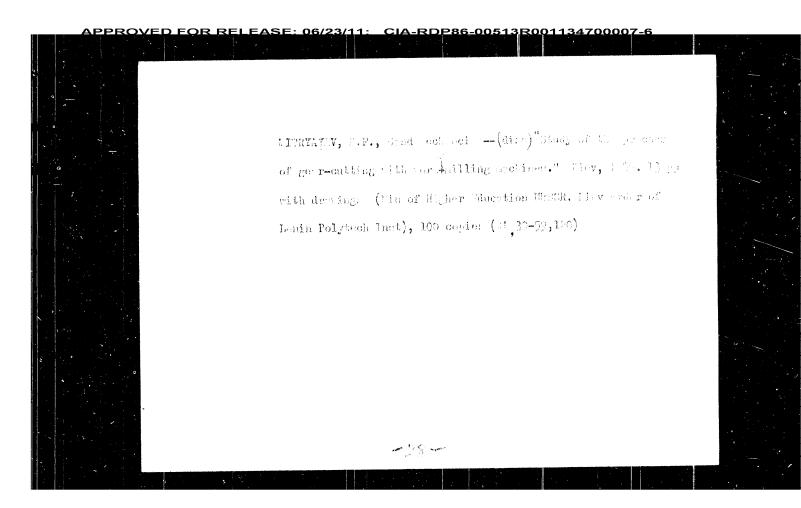
Investigating the cutting temperature during gear milling

PERIODICAL:

Referativnyy zhurnal. Mashinostroyeniye, no. 14, 1961, 67, abstract

14B460 ("Tr. Kuybyshevsk aviats. in-t", 1960, no. 9, 51 - 63)

The author describes a method of investigating the temperature TEXT: during gear milling for single-tooth and aggregate milling. The cutting temperature is measured with the aid of natural thermocouples, the blank being insulated from the machine tool. The temperature readings were recorded on a cinefilm with the aid of the MNO-2 (MPO-2) loop oscillograph. The following facts were established as a result of the investigations: 1) The results of temperature investigations are the most significative for single-tooth milling. 2) The milling cutter teeth do not warm up uniformly. During normal milling conditions the temperature of the cutter middle teeth attains 500 - 600°C. It is recommended to use effective coolants and axial displacement of the milling cutter. 3) The obtained formulae make it possible to set the milling cutter more exactly



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sov/123-59-16-64878

Electroinductive Dynamometer for the Measurement of the Stresses at the Gear Cutting Process

the cutting stress the spokes are bent, the rim is displaced relative to the hub, which leads to an increase of the mentioned clearance in one pick-up and to a decrease in the other. When the torque at the spindle changes in the range of 0 - 45 kilogrammeter the clearance is changed by 0.1 mm; the changes in inductance of the pick-ups arising from this are recorded by an electric device the connection of which is effected by a current collector. The electric circuit of the device consists of the feed unit, the sound generator of the ZG-10 type, and the amplifier. If a resistance potentiometer is installed in the circuit it is possible to obtain 5 ranges of different sensitiveness. The current at the output of the amplifier, which is the gage for the torque to be measured, is recorded by a loop oscillograph. Examples of operating and gaging oscillograms are stated, and also a gaging graphic of one of the measurement ranges, which shows the linear relation between the torque to be measured and the indication of the oscillograph. Results are given of the investigation of the dynamics of gear cutting on the gear cutting machine "532" with standard single-thread worm cutters of medium module (m = 1.75 - 5), steel of R9 grade being used. 3 references.

K.S.M.

SOV/123-59-16-64878

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 16, p 170 (USSR)

AUTHORS: Kravchenko, B.A., Mitryayev, K.F.

TITLE: Electroinductive Dynamometer for the Measurement of the Stresses at the

Gear Cutting Process

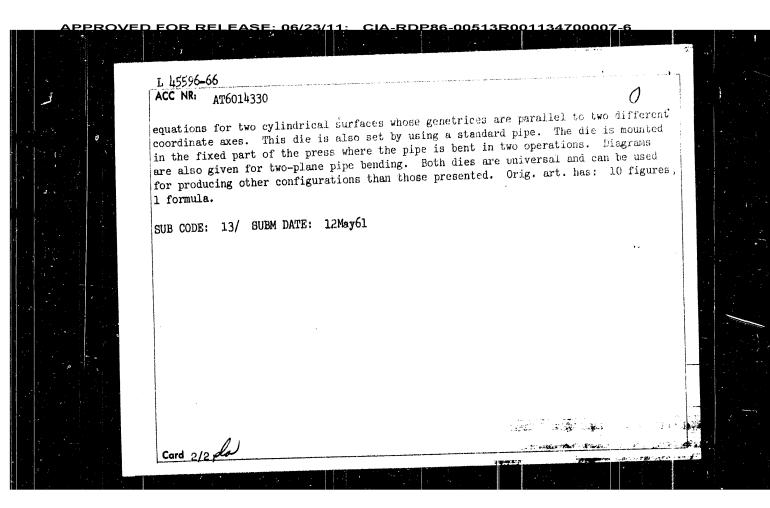
PERIODICAL: Tr. Kuybyshevsk. aviats. in-t, 1958, vyp. 7, 87 - 100

For the investigation of the dynamics of gear cutting an inductive torsion ABSTRACT:

dynamometer was used. The elastic part of the dynamometer is of diskshaped execution, manufactured of 30KhQSA steml; the rim and hub of the disk are connected by 10 radial spokes of rectangular cross-section, subjected to bending. The rim is fastened to the flange of a conic shaft, by the aid of which the dynamometer is adjusted in the spindle of the milling machine. Worm cutters are placed on the mandrel, fastened to the hub. In the interior of the elastic part 2 inductive pick-ups are fitted, the cores of which, assembled of III -shaped transformer iron, are fastened to the rim while the armatures are fastened to the hub. With 400 turns

and an initial clearance of 0.25 - 0.3 mm between armature and core the

Card 1/2 inductance of the pick-ups amounts to 40 millihenry. Under the effect of



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L 45596-66 EWT(1)/EWT(m)/EWP(t)/ETT/EWP(k) IJP(c) JD/HW/JH ACC NR: AT6014330 SOURCE CODE: UR/2529/62/000/070/0097/0105

AUTHOR: Mitryayev, I. M.

40

ORG: None

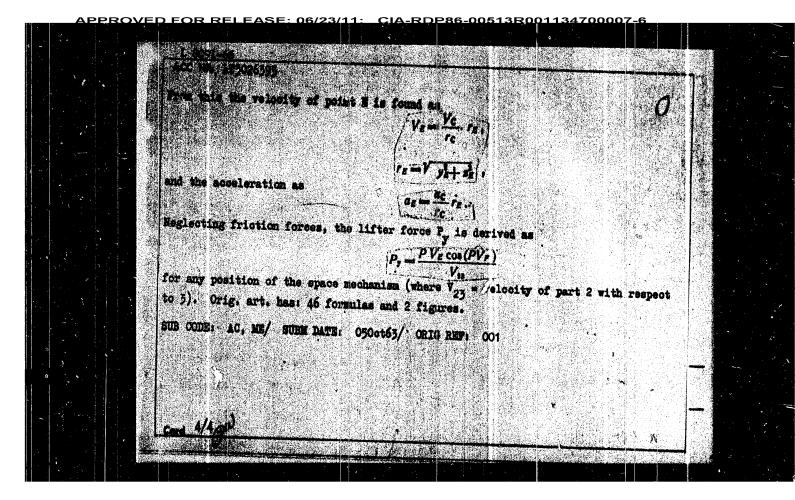
3+1

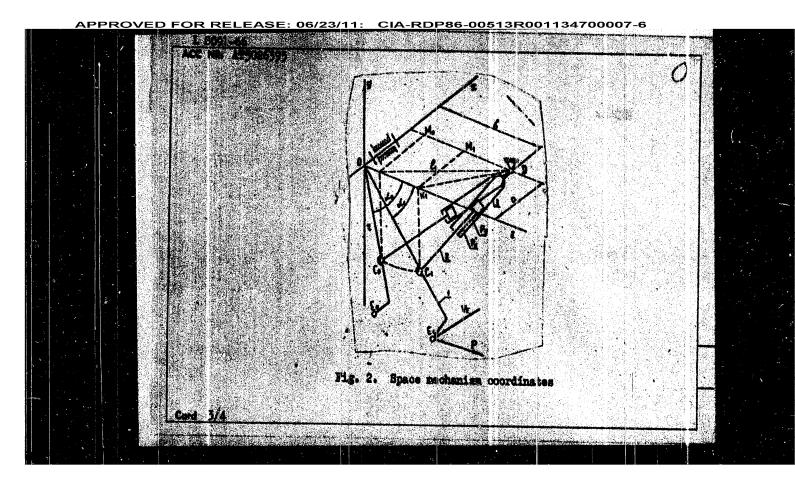
TITLE: Dies for pipe bending

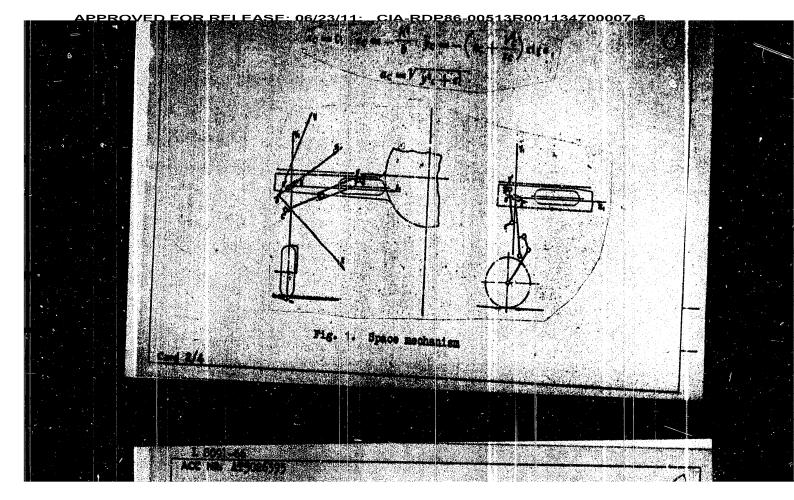
SOURCE: Kazan. Aviatsionnyy institut. Trudy, no. 70, 1962. Aviatsionnaya tekhnologiya i organizatsiya proizvodstva (Aviation engineering and organization of production), 97-105

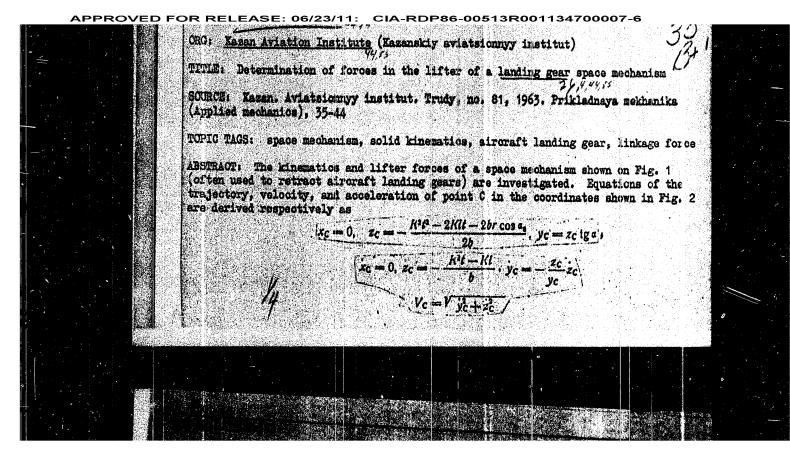
TOPIC TAGS: die, pipe, metal forming press, bending machine, merna Renovala,

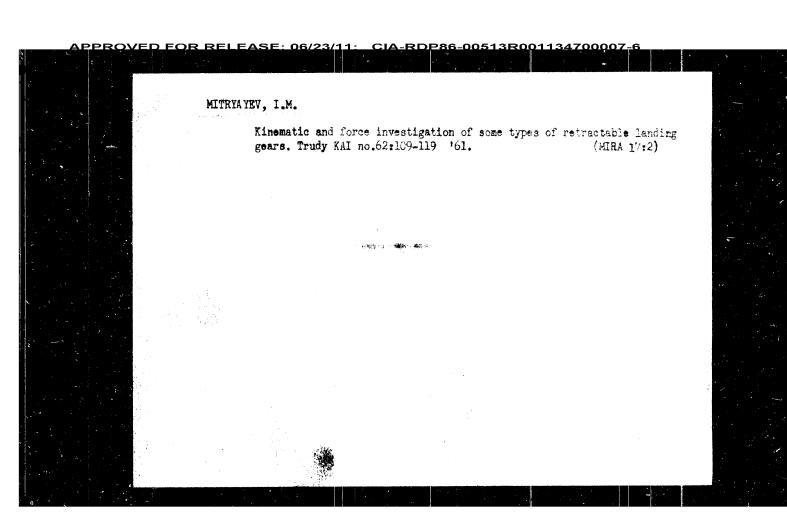
ABSTRACT: The author studies dies for bending copper, aluminum, steel and brass pipe of small diameter. The dies are used on hydraulic and pneumatic presses. Pipes are bent with fillers and without fillers depending on their intended use. Dies are considered for bending pipes in single and double planes. Those for bending pipes in a single plane have various center line curvatures. The die is set with a standard pipe and then fixed to the immobile part of the press. The pipe is inserted and bent in one operation. Good production results were achieved without using fillers by covering the male and female die surfaces with sheet rubber. Diagrams are given for the arrangement of the dies and bending configurations. In the case of two-plane pipe bending the die has the form of a space curve. The line in space can be given by

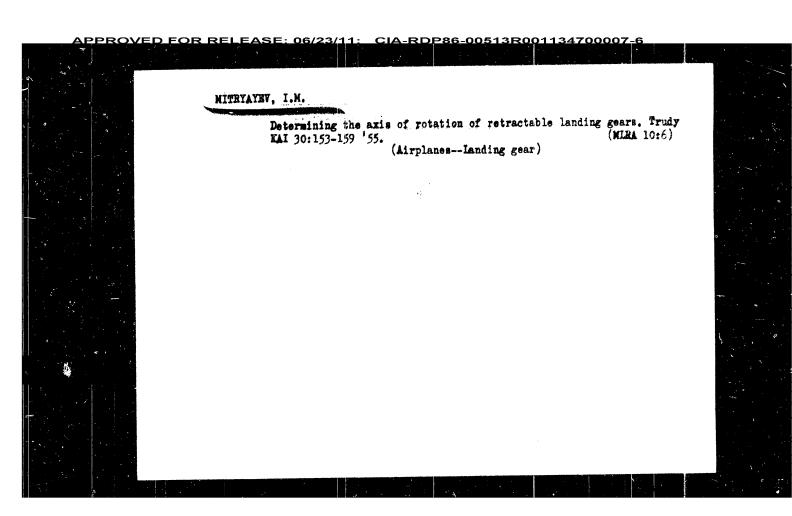


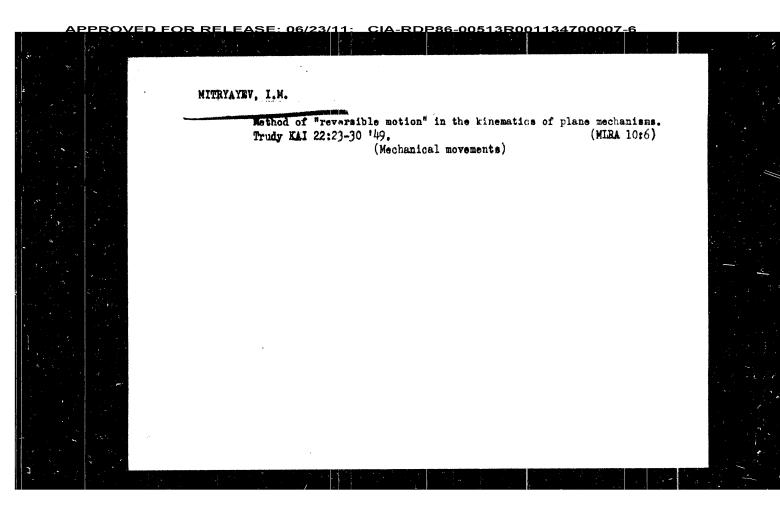


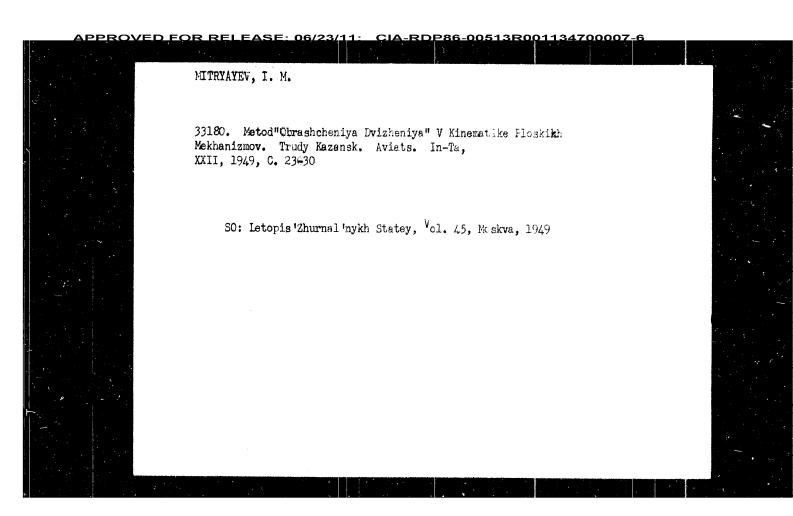








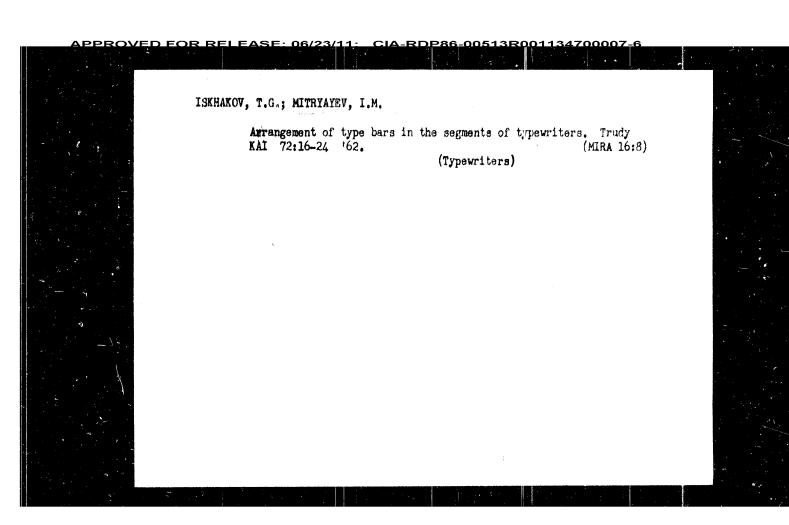




MITRYAYEV, I. M., Dmgr. Cand. Tech. Set.

Dissertation: "Spatial Mechanisms of a Landing Geor, Their Classification, Kineselics and Kinelastatics." Mescov Order of Londr. Avietion Inst Inend S. Crisboninists, 25 Dec 27.

30: Veclernyaya Moskya, Dec, 1947 (Project #17836)



APPROVED FOR RELEASE: 06/23/11; CIA-RDP86-00513R001134700007-6

ACCESSION NR: AR4014557

ing surfaces of the male and female dies are covered with sheet rubber. A die for bending of pipes in two planes consists of one female and two male dies; vertical and horizontal. The bending is carried out with two strokes of the press; The first drawing is made by the vertical male die; then the united female and vertical male dies are rotated through 90° and at the second stroke of the press the final bending is accomplished by the horizontal male die. The female die and the male dies consist of a body and plates. Setup of the die is likewise accomplished by a calibration pipe, the female die being set up first and the male dies then being adjusted to the female die. Ill., 10. Ye. Vayner.

DATE ACQ: 09Jan64

SUB CODE: IE, ML

ENCL: 00

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ACCESSION NR: AR4014557

s/0276/63/000/012/V022/V022

SCURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 12V140

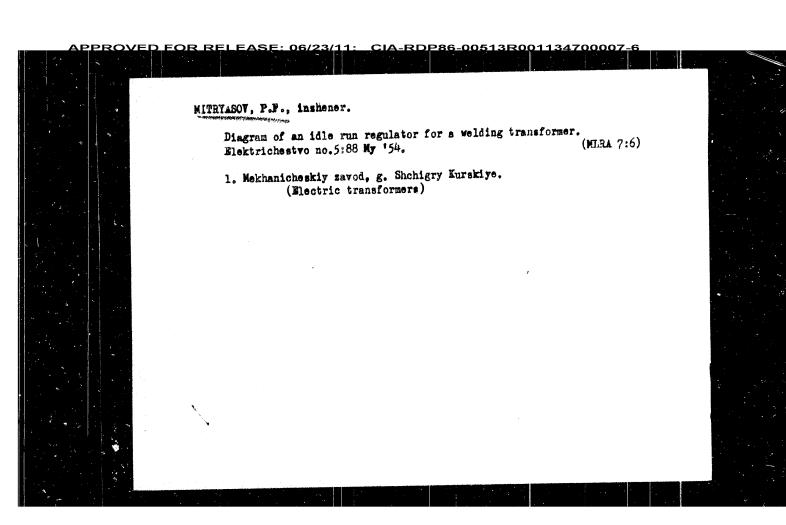
AUTHOR: Mitryayev, I. M.

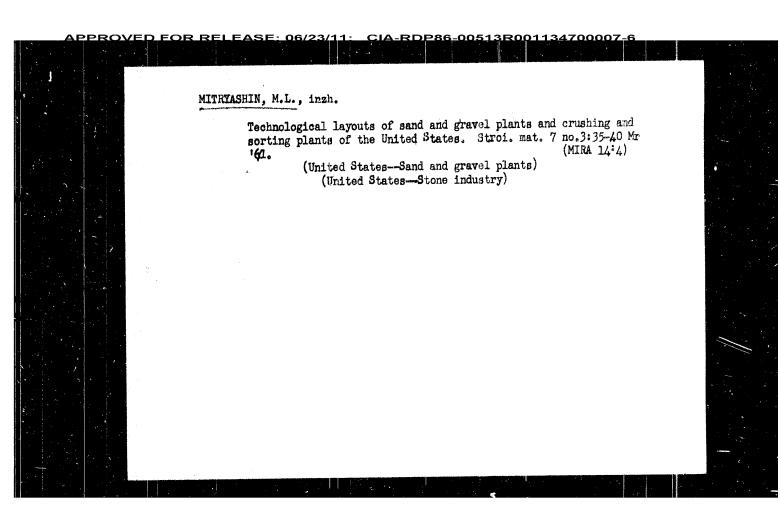
TITLE: Dies for pipe bending

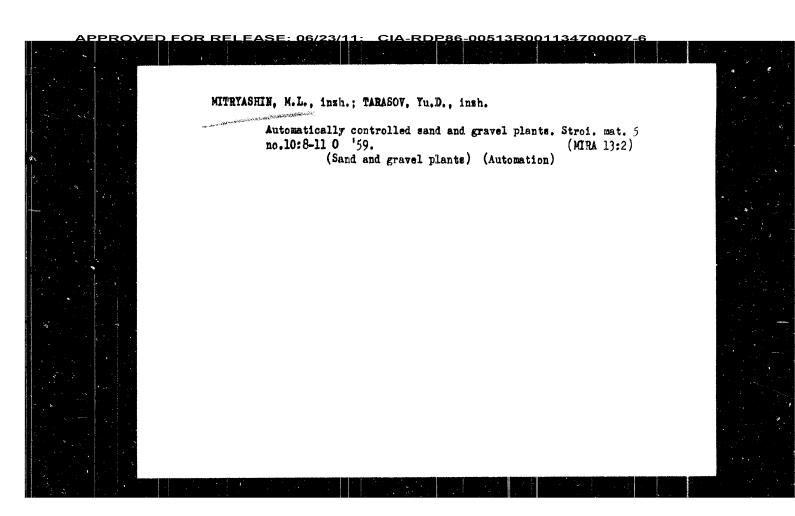
CITED SOURCE: Tr. Kazansk. aviats. in-ta, vy*p. 70, 1962, 97-105

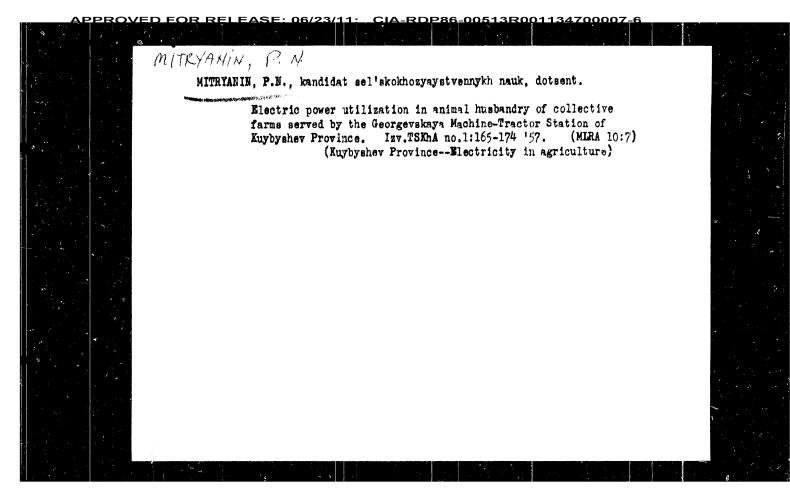
TOPIC TAGS: pipe bending, pipe bending die, small dismeter pipe bending, small pipe bending, pipe bending punch, pipe bending press, punch press

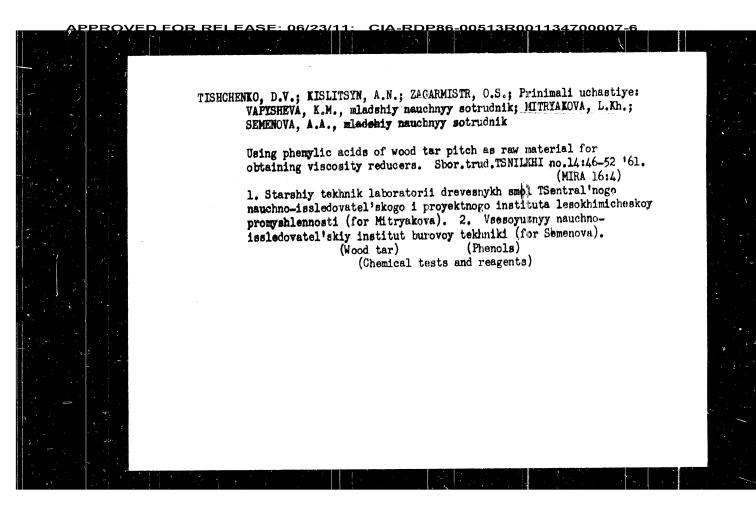
TRANSLATION: A description is given of dies for bending of pipes of small diameter from steel and non-ferrous metals. The male and female die for bending of pipes in one plane consist of a body and a series of parallel plates. Setup of the die is accomplished with the help of a calibration pipe. The plates of the female die are set in the body at a height corresponding to the standard so that the edges of the plates form the necessary profile. The male die is adjusted according to the female die or according to the calibration pipe. In such a die the bending is accomplished at one stroke of the press. The work-

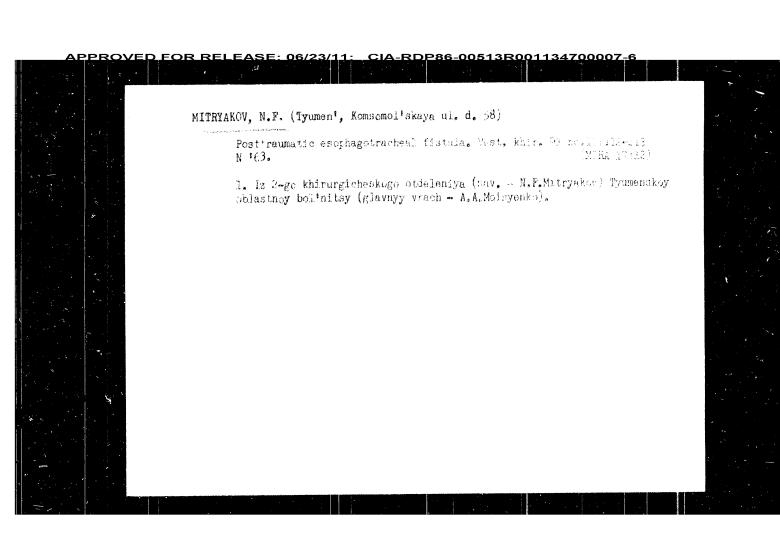


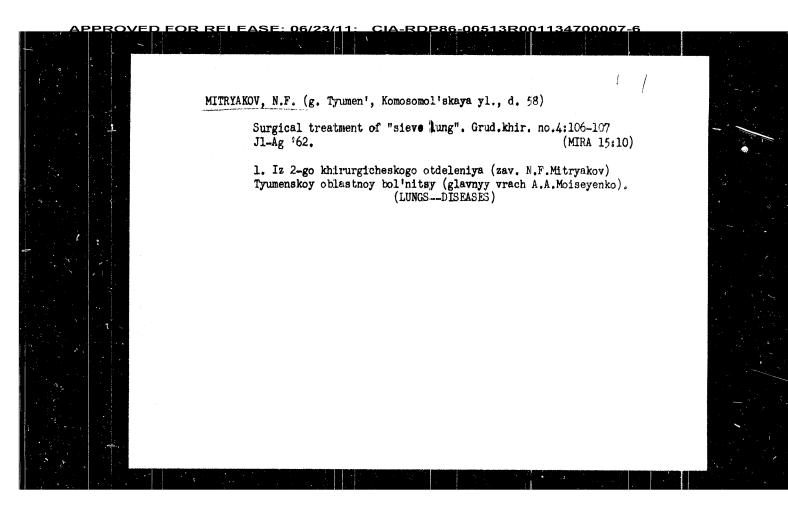


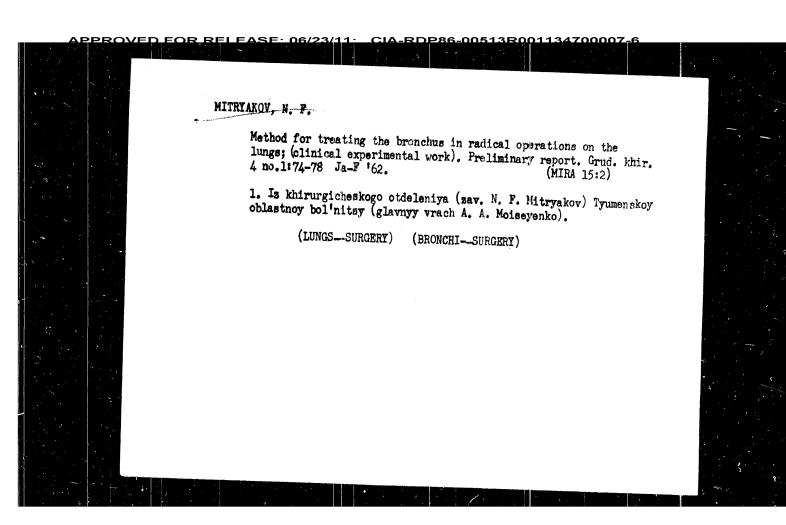


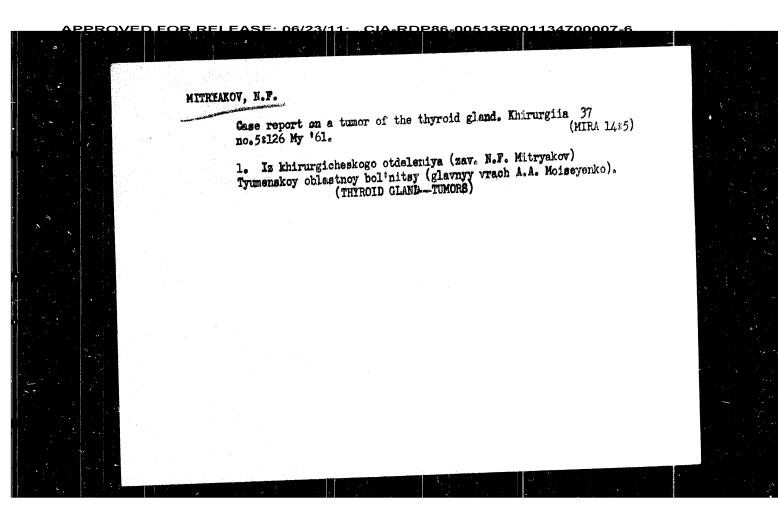








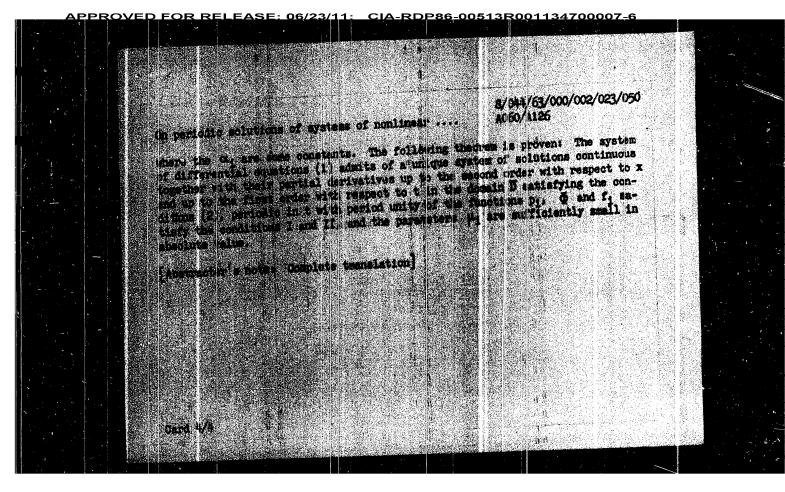


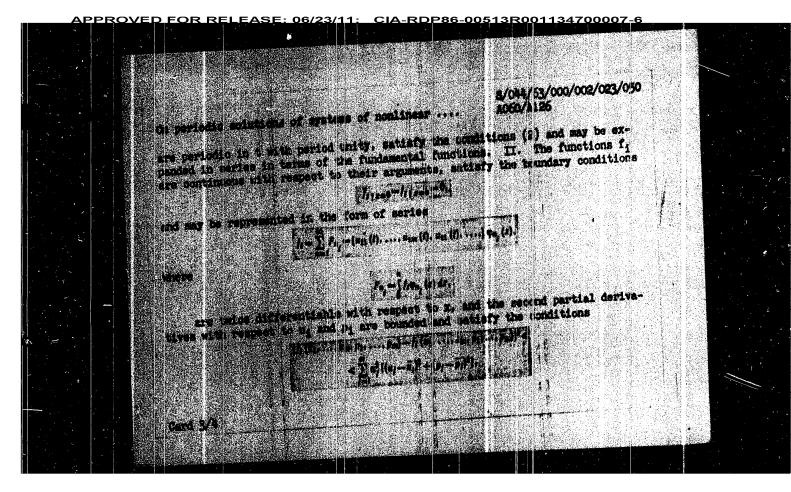


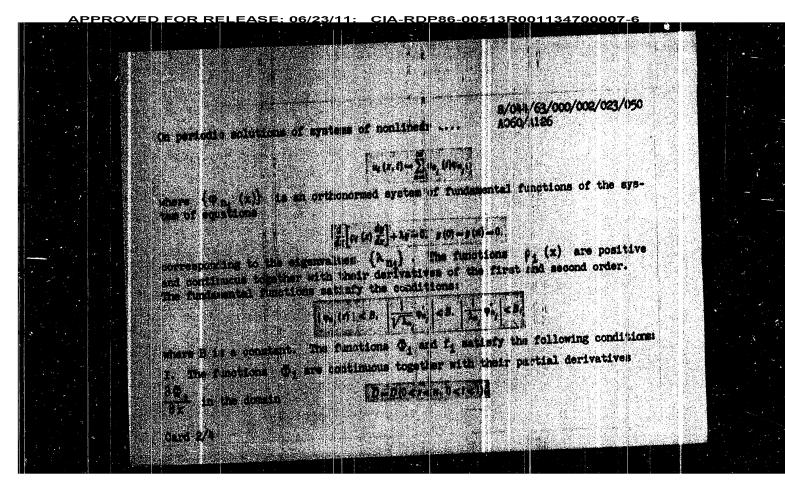
MINIATOR, H.F. (Tyumen', Komsomol'skaya, ul., d. 58)

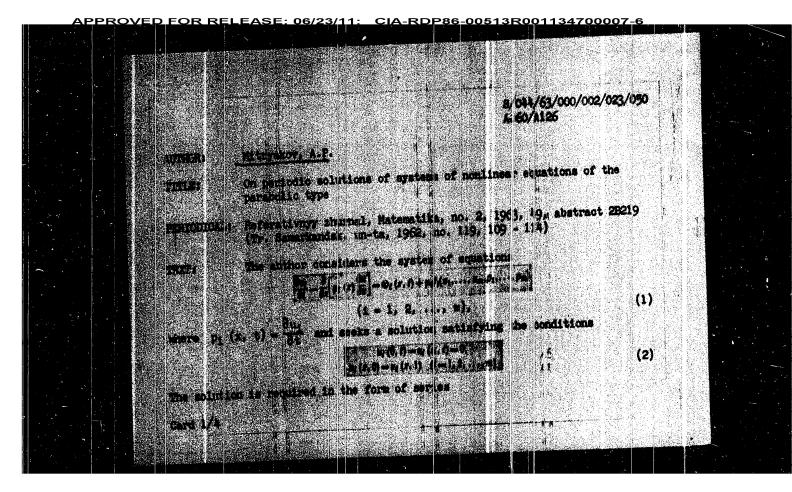
Spontaneous valvular pneumothorax treated by surgery. Vest.khir.
82 no.1:135 Ja '59.

1. Is 2-go khirurgicheskogo otdeleniya (xgv, L.Ya. Shnitser)
Tyumenskoy oblastnoy bol'nitsy.
(YMEDNOHURAX)







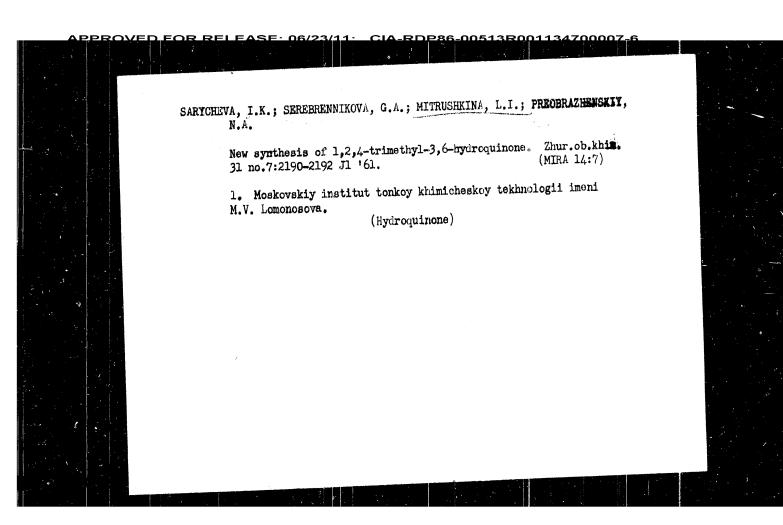


MITRYAGDIA, S. F.

Mitryagina, S. F.

"Investigation of Thebaine." Min Mealth USSR. Meason Pharmacentical Ind.
Noscow, 1955. (Dissertation for the Degree of Camildate in Thurnacentical
Science)

So: kmizhnaya letopis', No. 27, 2 July 1955



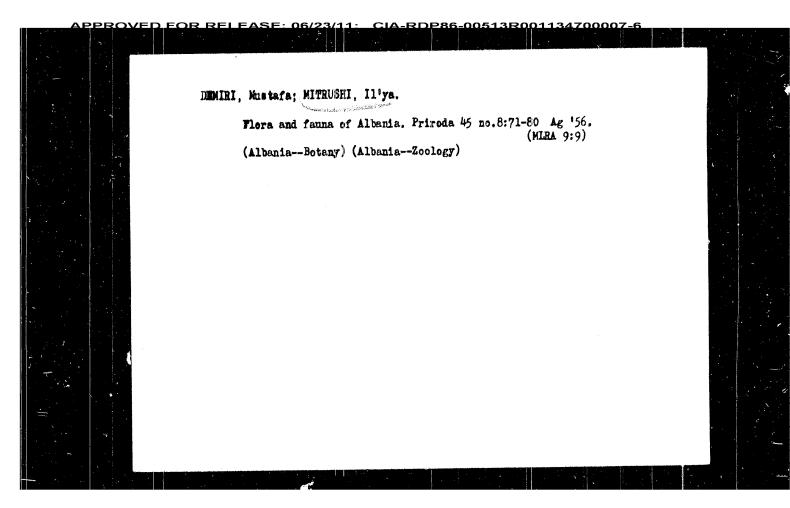
MITRUSHIN, M. M.

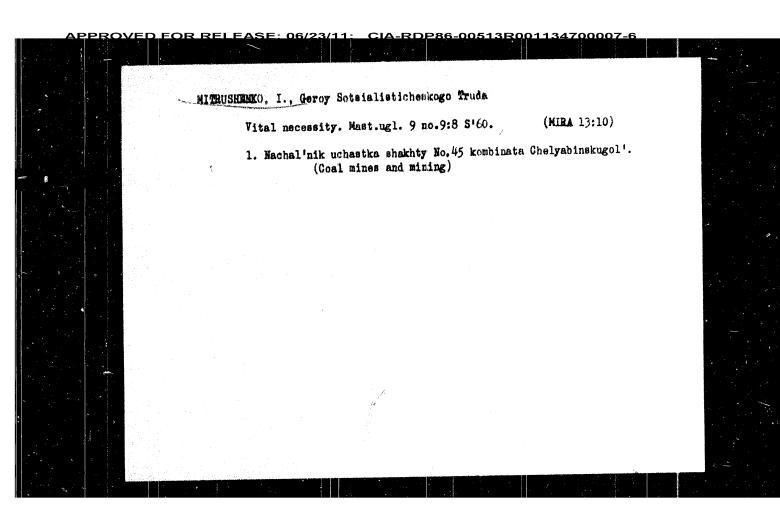
Drilling and Boring Machinery

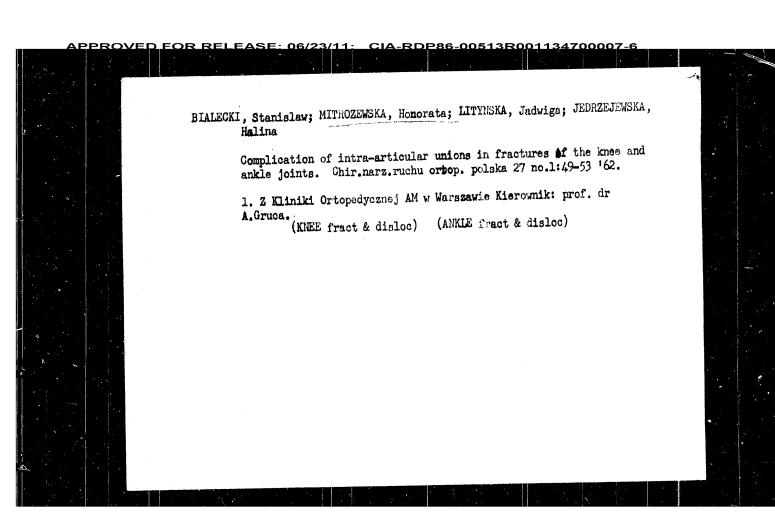
Drilling dynameter of simple construction, Stan. 1 instr. 23 no. 3:37 mr '52.

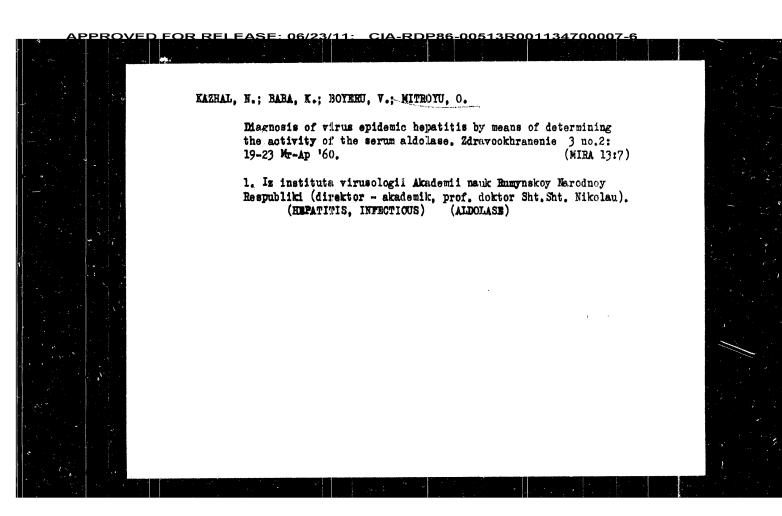
Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.

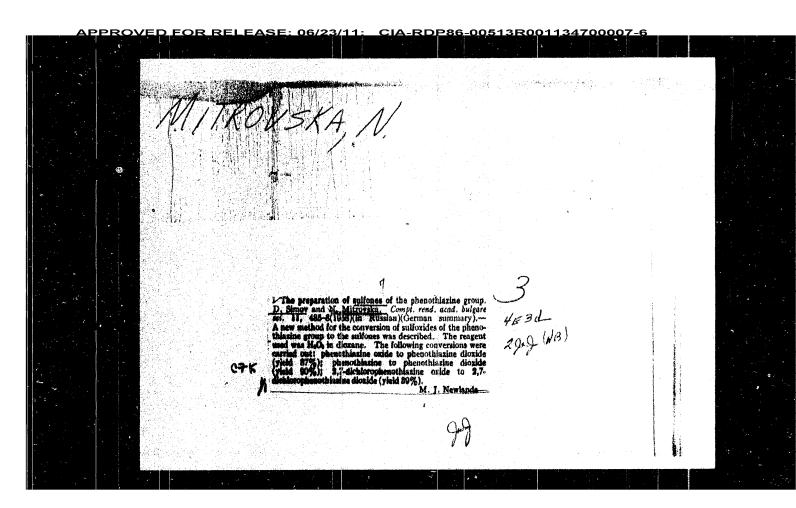
26-58-6-25/56 Mitrushi, Il'ya AUTHOR: The Forests of Albania (Lesa Albanii) TITLE: Priroda, 1958, Nr 6, p 93-95 (USSR) PERIODICAL: Albania is mainly a mountainous country, 47 % of which is cover-ABSTRACT: ed by forests. The total forestal area amounts to 1.36 million ha. The mean annual temperature varies between 14.5 and 18° C, and the climate is one of the dampest in all of Europe. For that reason the variety of trees growing in Albania is very rich. A list of these trees is given. There are 3 photos. ASSOCIATION: Institut nauk, Tirana (Albaniya) (Institute of Sciences, Tirana - Albania) 1. Geography-Albania 2. Forestry Card 1/1









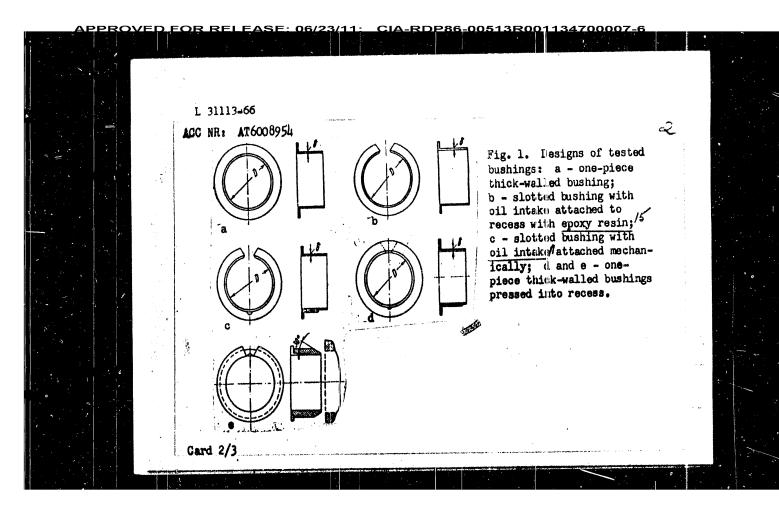


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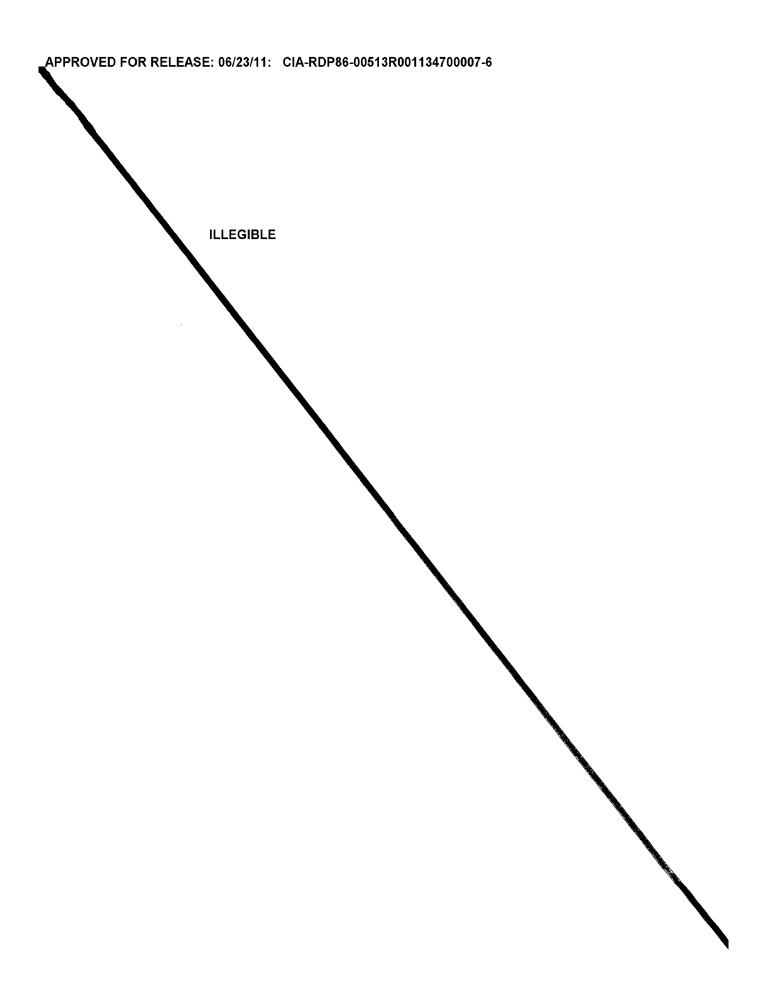
AGC NR: AT600895h

bushings are studied. The bushing design shown in Fig. 1 was found to have the best qualities. The supporting strength of caprone bushings is fairly high. Orig. art. has: 2 tables, 2 diagrams, and 1 graph.

SUB CODE: 11/ SUBM DATE: 31Ju165/ ORIG REF: CO5



WW/DJ/GS/RM EWT(m)/EWP(1)/T/ETC(m)-613P(c) L 31113-66 SOURCE CODE: UR/OOCO/65/000/000/0149/0155 ACC NR: AT6008954 AUTHOR: Mitrovich, V. P. ORG: none TITLE: A study of caprone bushings SOURCE: Moscow. Institut mashinovedeniya. Plastmassy v podshipnikakh skolizheniya; issledovaniya, opyt primeneniya (Plastics in friction bearings; research and experiment in application). Moscow, Izd-vo Nauka, 1965, 149-155 TOPIC TAGS: friction coefficient, wear resistance, lubricant, resin, lubricating oil ABSTRACT: The advantages and disadvantages of certain designs of thick-walled bushings are discussed (see Fig. 1). The effect of the shaft surface finish on caprone wear is studied. Ground rollers were heat-treated to a hardness of HRC = 38-42. The slip speed was 0.5 m/sec, and the pressure was 110 kg/cm². It is found that the form of the roughness peaks and not the class of smoothness has the deciding influence in caprone wear. Ground rollers with a surface smoothness of ∇ ? caused the greatest wear. The limiting operating conditions for caprone Card 1/3



ACCESSION NR: AP4043329

able aging. Concerning the relationship between abrasion rate and temperature, Kapron showed the best results. Frictional tests on the same machine were carried out at loads of 5 and 38 kg/cm², and a shear rate of 0.22 m/sec. The temperature was increased from room temperature to the melting point of the polymers at a rate of 67-70C per hours, and "oil 12" was added at a rate of 6 drops per minute. Polypropylene had the lowest coefficient of friction, followed by polyformaldehyde. The highest coefficient of friction was ficient of polyamides, which increased with increasing temperature. At 38 kg/cm², the coefficient of friction of polyformaldehyde and polypropylene decreased with increasing temperature, while that of polyamides increased, although slightly. Orig. art. has: 4 figures.

ASSOCIATION: None

SUBMITTED: 00

SUB CODE: OC, MT

NO REF SOV: 004

OTHER: 000

ACCESSION NR: AP4043329

8/0191/64/000/008/0063/0064

AUTHOR: Mitrovich, V. P.

TITLE: Investigation of the friction and abrasion of some polymers

SOURCE: Plasticheskiye massy*, no. 8, 1964, 63-64

TOPIC TAGS: polymer, friction, abrasion, polypropylene, polyformaldehyde, heat stability, anid, nylon, enant, lubricant, plastic machine part, friction coefficient, polymer wear resistance, Kapron, polyamide

ABSTRACT: The serviceability of polymers used in combination with steel when lubricated with mineral oil under conditions close to those of the operation of bearings, when the frictional unit is liable to become overheated, was investigated in experiments with polypropylene (n = 3.67, 3.3% low-molecular weight compounds), polyformaldehyde (n = 1.3) heat-stability constant n = 0.16, "anid" (nylon, n = 0.73) and "enant" (n = 0.75), using the n = 0.87 machine and a unit consisting of a plastic bushing and a 45 HRC steel shaft at a load of 110 kg/cm², shear rate = 0.87 m/sec. The lubricant uned was "commercial oil 12" and the unit was run for 6-7 hours at temperatures of 20, 80, 120, and 160°C. The least abrasion was noted with polyamides such as Kapron, enant, anid and AK/7. A temperature increase up to 80C did not affect their abrasion, but a further increase resulted in consider-

Card: 1/2

AMI-033662

BOOK EXPLOITATION

S/

Mitrovich, Vadim Petrovich

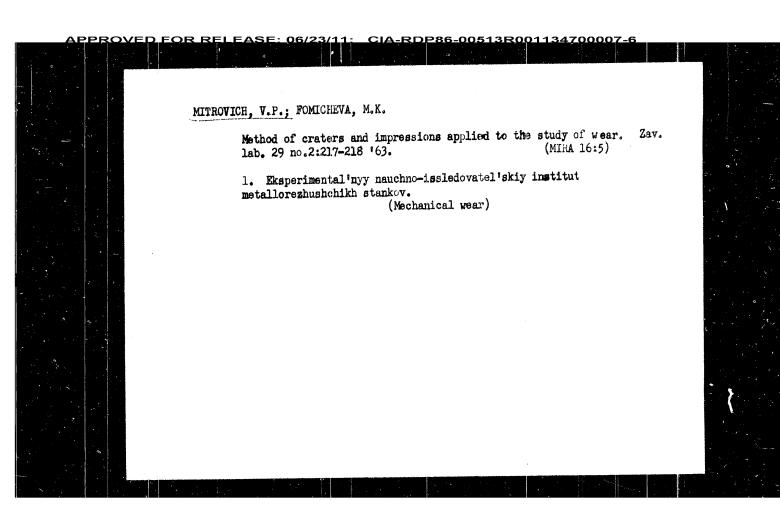
Study of friction of polyamides on steel (Issledovaniye treniya poliamidov postali) Moscow, Izd-vo AN SSSR, 63. 0094 p. illus., biblio. Errata printed or indide of back cover. 1,500 copies printed. (At head of title: Akademiya nauk SSSR. Gosudarstvenny*y komitet po mashinostroyeniyu pri Gosplane SSSR. Institut mashinovedeniya)

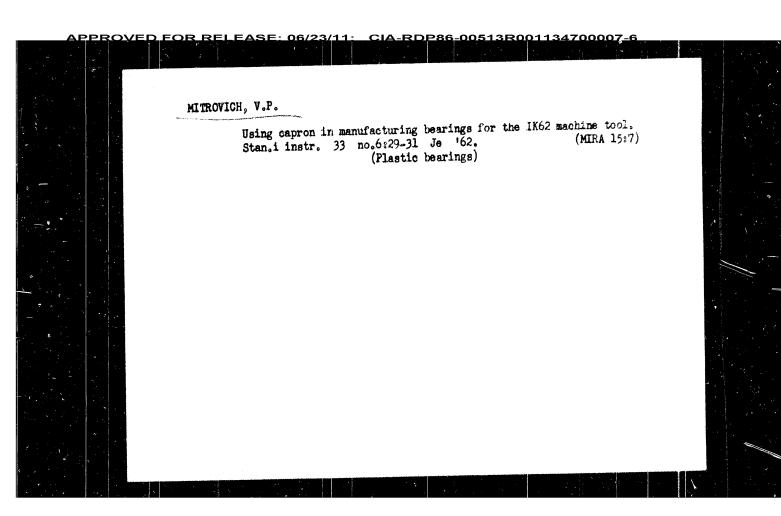
TOPIC TACS: polyamide, polyamide bearing material, polymer bearing material, kapron, nylon, machine tool bearings

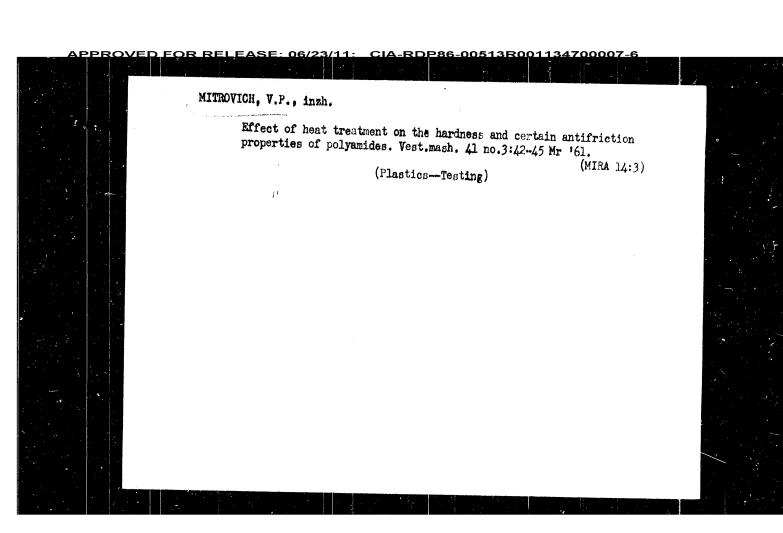
PURPOSE AND COVERAGE: The book contains the principal results of laboratory tests, carried out at the Wear-endurance Laboratory of the Institute of Machine Science and in the Experimental Scientific Research Institute of Metal-Cutting Tools, on plastics with good antifriction properties, primarily the polyamide group. The factors which determine the limiting conditions under which polyamides can operate in friction against steel are examines, and bearings made of kapron were tested for use in machanisms of metal cutting machinery.

TABLE OF CONTENTS [abridged]:

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33011

Some aspects of the ...

S/663/61/000/000/000/008/009 D040/D112

temperature on the two types of plastics may be due to the increasing specific adhesion in the hot material and not to the increased area of actual contact. The adhesion theory of Bowden and Tabor was confirmed by shear Lecta. Conclusions: (1) In dry friction of polyamides, and particularly upon an increase in temperature, the friction force depends mainly on the molecular interaction of the friction surfaces; (2) The friction behavior of the studied polymers and the explanation of the variation of the friction factor with temperature is closely connected with the chemical texture of the polywith rising temperature in the case of friction of polyamides with steel. There are 6 figures, 1 table and 5 references: 3 Soviet and 2 non-Soviet-bloc. The two references to English-language publications read as follows: R.F. King, D. Tabor. The Effect of Temperature on the Mechanical Properties and the Friction of Plastics. Proc. Phys. Soc., 66, P. 9 (405 B), 1953; F.P. Bowden, D. Tabor. The Friction and Lubrication of Solids. Oxford,

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Some aspects of the ...

(b) Polyethylene and polytetrafluoro-ethylene whose simplified formulas are:

All specimens were products of industrial fabrication. The test machine and devices, and the heating system for the specimens were the same as in the previous experiments (Ref. 1). The tests were conducted with a 1 kg load and a 13.2 m/min sliding velocity. The Super-Rockwell hardness tester used for the hardness measurements at increased temperatures was fitted with a heating arrangement for the indentor; the specimens themselves were heated by an electric heater in the specimen table. The friction factor of the polyamides which contain polar peptide groups producing considerable cohesion and adhesion forces) rose much more sharply than that of polyethylene or polytetrafluoro-ethylene (which has the lowest adhesive capacity of all existing polymers). As it was also found that the hardness of polyethylene and polytetrafluoro-ethylene decreased more than that of polyamides upon an increase in temperature, it was supposed that the different effect of the

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s/663/61/000/000/000/005/009 D040/D112 2209 15.8360 Mitrovich, V.P. AUTHOR: Some aspects of the friction behavior of polyamides TITLE: Plastmassy kak antifriktsionnyye materialy. Inst. mashinoved. SOURCE: AN SSSR. Moscow, Izd-vo AN SSSR, 1961, 53-59 TEXT: This article describes experiments made to explain the abrupt increase of the friction factor of polyamides in dry friction with steel upon an increase in temperature. This phenomenon had been observed in previous experiments (Ref 1: V.P. Mitrovich, the preceding article in this sysposium, pp 43-52). The present article also contains a description of tests for hardness and shear resistance at increased temperatures. The following materials were chosen for the study: (a) The three most extensively used polyamides whose formulas in simplified form are:

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Laboratory test data on ...

heating and cooling, and the critical pressure-velocity (pv) value could be increased more than tenfold without any destructive effect: this may be the explanation for the difference in data obtained by different investigators. The plastic specimen blanks were supplied by the laboratoriza no. 10 (Laboratory no.10) of NIIPlastnass. Conclusions: The data prove that the friction surface temperature of polyamides in contact with steel under dry-friction conditions has a decisive effect on the friction factor, the intensity of wear, the critical (pw)value, as well as on the nature of the dependences of wear, the critical (pw)value, as well as on the nature of the dependences of wear on load and friction factor on sliding velocity. There are 14 figures and 8 references: 4 Soviet and 4 non-Soviet-bloc. The 4 references to English-language publications read as follows: A. Schallanach. Atracia. English-language publications read as follows: A. Schallanach. Atracian. Milz, L.B. Sargent. Frictional Characteristics of Flastics. Lubrication Engineering, vol. 11, N. 5, 1935; B. Olofsson, Measurement of Priction Between Single Fibers. Textile Research Journal, vol. 22, N. 7, 1930; Between Single Fibers. Textile Research Journal, vol. 22, N. 7, 1930; A. Schallanach. The velocity and temperature dependence of Public Priction. Proc. Phys. Sec., vol. 66, N. ACI, B. P. 5, 1933.

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Laboratory test data on ...

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load, 3 kg. in this case, the plastic stuck to the steel disc, spread over it, and separated in the form of flakes. A further load increase caused melting, and the plastic surfaces acquired a wavy appearance similar to that of rubber subjected to abrasive wear. Contrary to the data of Pascoe, Tabor. Shooter, Milz, Sargent and other investigators who studied the friction hehavior of polyamides at low speeds, when the specimens were not heated to any marked degree, the author found that the friction factor did not drop with increasing load. The effect of temperature on friction was therefore studied, with the use of two systems. In the first system, the steel disc and the specimen were heated by a copper rod, which thrust against the disc and was heated by a tubular electric heater. In the second system the disc was cooled by cooling the copper rod. It was found that the temperature has a great effect on the friction factor: cooling reduced the friction factor and heating raised it. It is supposed that the higher friction factor at low speeds is due to more complete contact between the surfaces; this explanation was also given by Olofsson. The mechanism of the friction of polyamides is considered not comparable with the mechanism of viccous flow. although Schallamach and Bartenev consider this can be done in the case of rubber. The friction factor varied more than 3 times through the effect of Card 2/3

15 8360

33010 %/663/61/000/000/004/009 D040/D112

AUTHOR: Mitrovich, V.P.

TITLE: Laboratory test data on the dry-friction behavior of polymerides

SOURCE: Plastmassy kak antifriktsionnyye materialy. Incl. and incred. AN SSSR. Moscow, Izd-vo AN SSSR, 1961, 43-52

TEXT: The dry-friction behavior of caprone, AK7 (AC7) and \$\pi\$ 60 (P60) plastics was studied, as this matter had not been sufficiently studied. A modified Skoda-Sawin test machine was used, the friction being applied by steel discs. The plastics were subjected to varying loads, sliding speeds and temperatures. The test techniques are described in detail. Wear was measured by an indicator with 1 divisions. Some of the caprone specimens were heat treated by heating to 150°C in "vapor" oil, holding for 4 hours and cooling at a rate of 15-20°C/hr; this did not affect the texture. The heat-treated caprone was tested at a constant sliding velocity of 13.2 M/min and a 0.5-4.5 kg. load. Friction heat markedly intensified wear. The friction factor curves of all three plastics were analogous. The wear of heat-treated caprone was uniform and the separating white plastic dust did not stick to the discs when the load was below the critical point, but above the critical Card 1/3

A New Form of Application of the Skott of in 1/63 126/312/325/336
Machine for Priction- and Wear Tests Wit:
Plastic Materials

of the temperature of the sample, that of polyethylene rises under the same conditions much moreslowly (with the exception of the temperature near the diffusion point of the polymer) and that of polytetrafluoro-ethylene drops under the same conditions with increasing temperature.
There are 4 figures and 1 Soviet reference.

ASSOCIATION: Institut mashinovedeniya Akademii nauk SSSR
(Institute of Machine Science of the Academy of Sciences, USSR)

A New Form of Application of the Skoda-Savin 3/032/60/026/012/025/036 Machine for Friction- and Wear Tests With B020/B055 Plastic Materials

was 20 mm2. It was washed with sulfuric ether. The load was varied from 0.5 to 3.75 kg. The sliding rate was 13.2 m/min. The wear intensity was determined under all conditions at given frictional character. The inflections on all curves are due to a change in the character of friction- and wear, which, in the case of increased load, occurs as a result of the increased temperature of the specimens. For investigating the dependence of the wearability and the coefficient of friction of the polymers upon the conditions of heat transfer and the temperature at laboratory conditions, a number of simple devices was constructed. The simulation of various conditions of heat transfer was brought about by cooling the disk by means of water, or by additional electric heating the sample. By means of the first-mentioned device, capron was tested during friction without lubrication under various conditions of heat transfer (Fig. 4a). The most essential dependence of the coefficient of friction, of the intensity of wear, and the usefulness of capron upon the heat transfer conditions at the place of friction is shown by Fig. 4a. Fig. 40 shows the results obtained by friction tests of polyamides (capron, AK-7 (AK-7) and $\Pi-68$ (P-68)), polyethylene and polytetrafluoroethylene at increased temperatures. The coefficient of friction of the polyamides rises considerably with an increase Card 2/3

| g/032/61, 026/012/025/036 | 026/8046

AUTHOR:

Mitrovich, V. P.

TITLE:

A New Form of Application of the Skoda-Savin Machine for

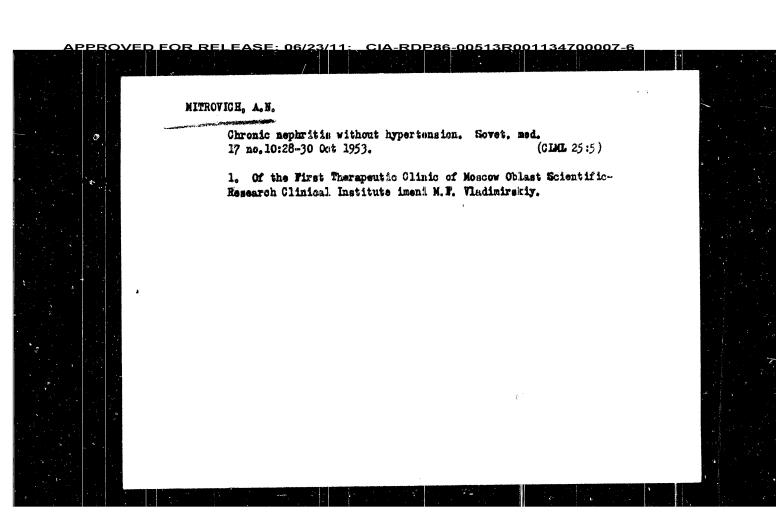
Friction and Wear Tests With Plastic Materials

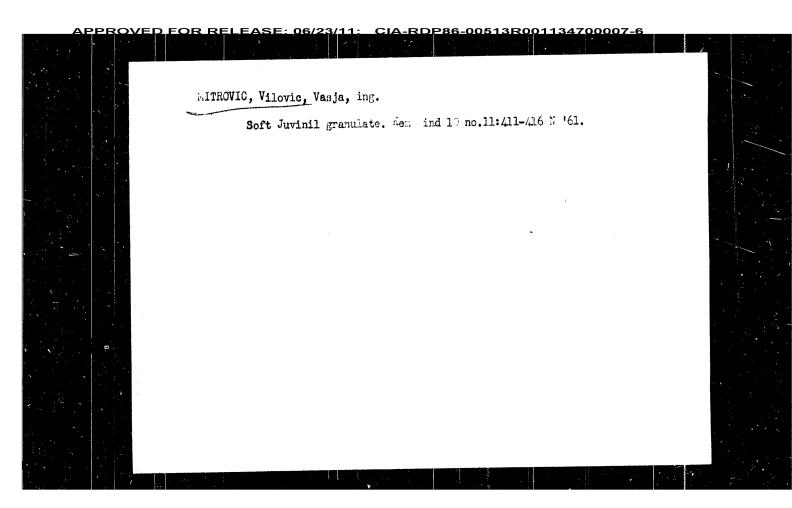
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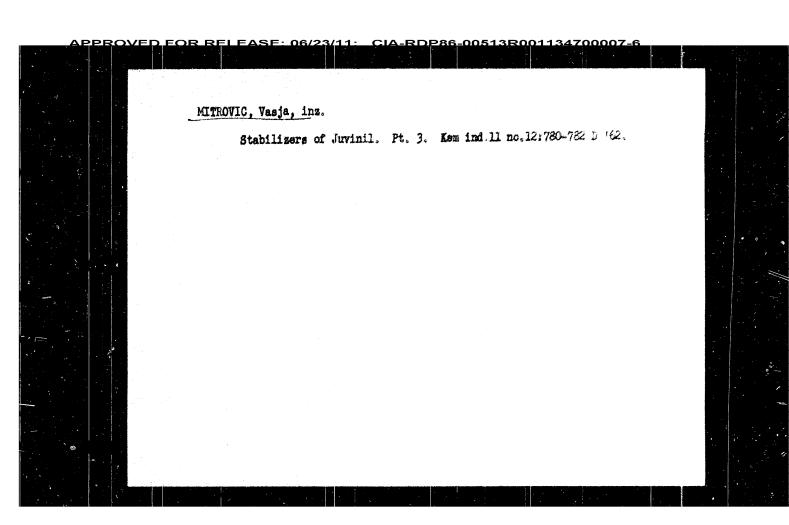
Zavodskaya laboratoriya, 1960, Vol. 26, No. 12,

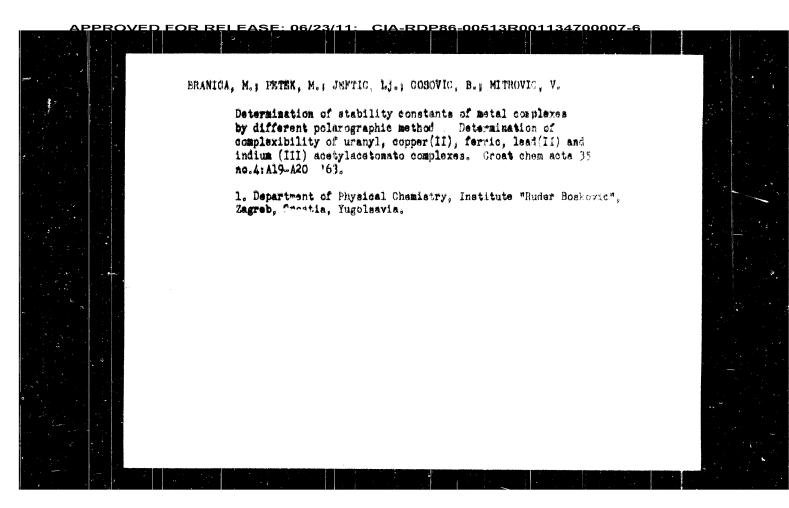
pp. 1408-1411

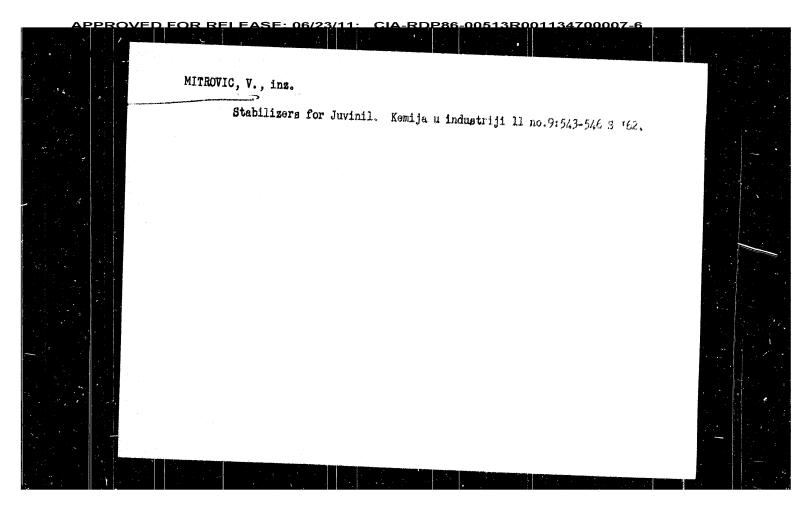
TEXT: The Skoda-Savin machine is frequently used for determining the wearability of metal surfaces under special test conditions, the range of use of this machine being limited by the fact that measurement of frictional force is impossible. An additional device to this machine, in which the principal technical characteristics are maintained, makes it possible to use the machine both for determining the wearability and also the coefficients of friction during tests according to the scheme "wave - partial inlet" of various metallic- and non-metallic materials. The same load system was used as in the machine "P" ("R") by M. M. Khrushchov. The reconstructed operating part of the machine is shown in Fig. 1. By way of example, Fig. 2 shows the results obtained by friction- and wear tests of capron, which were carried out without lubrication. The friction area Card 1/3

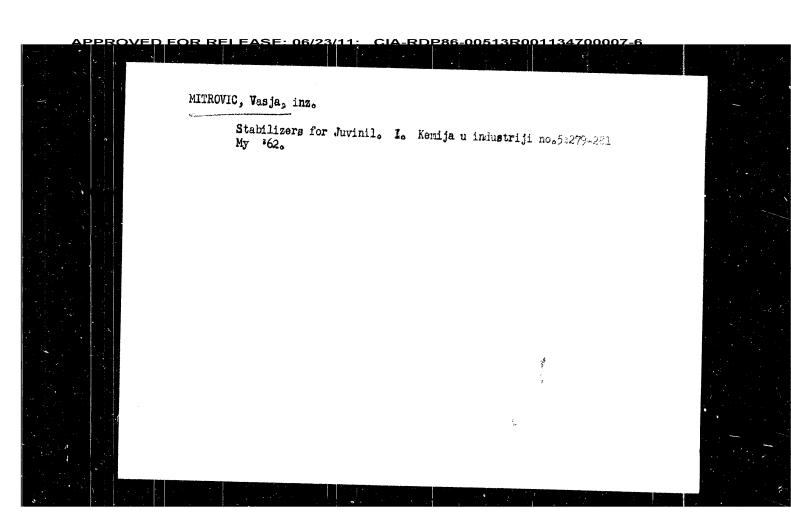


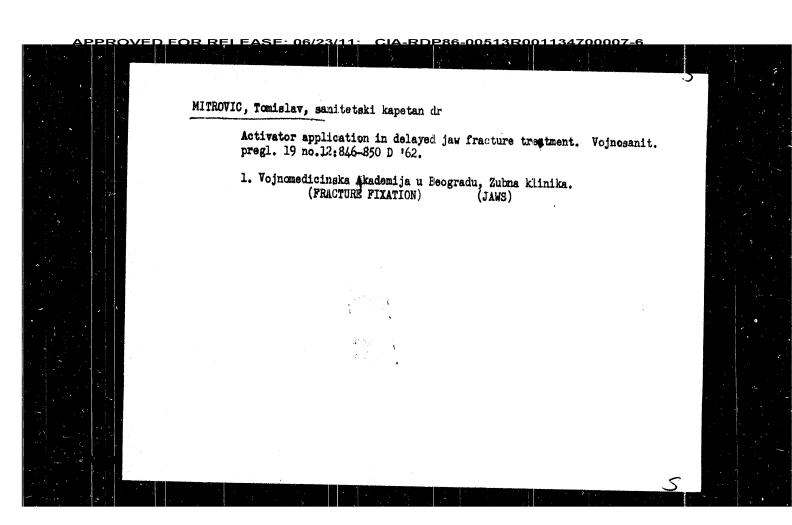


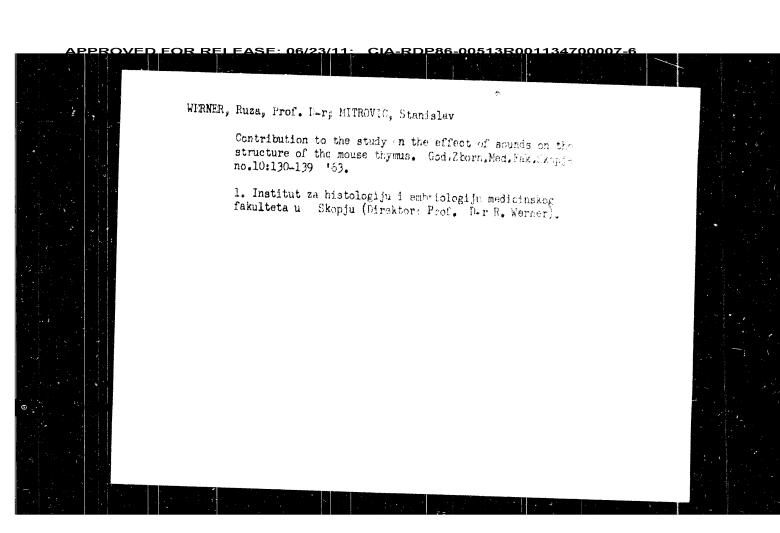


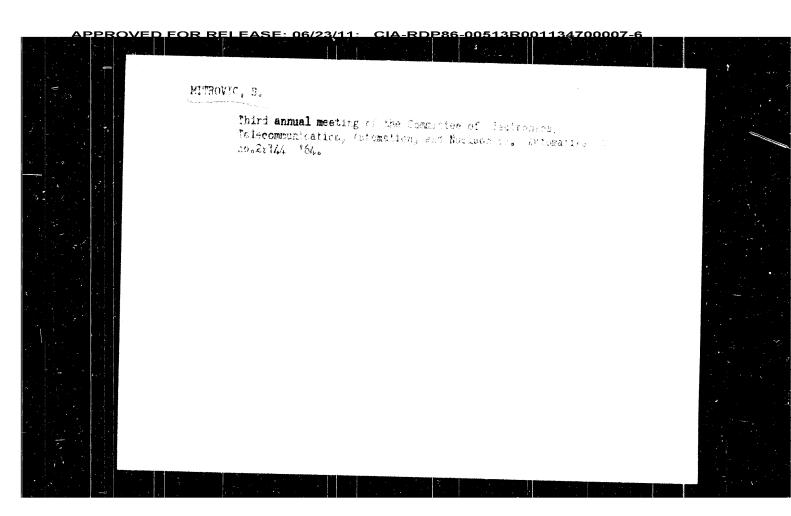


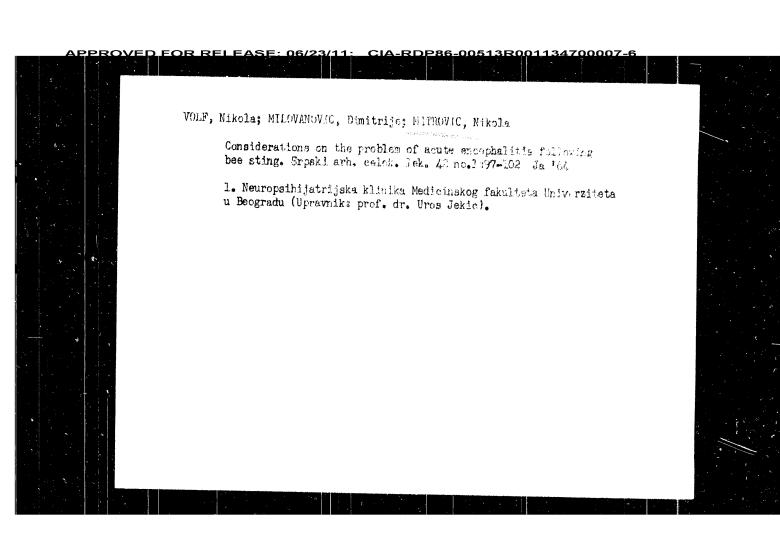


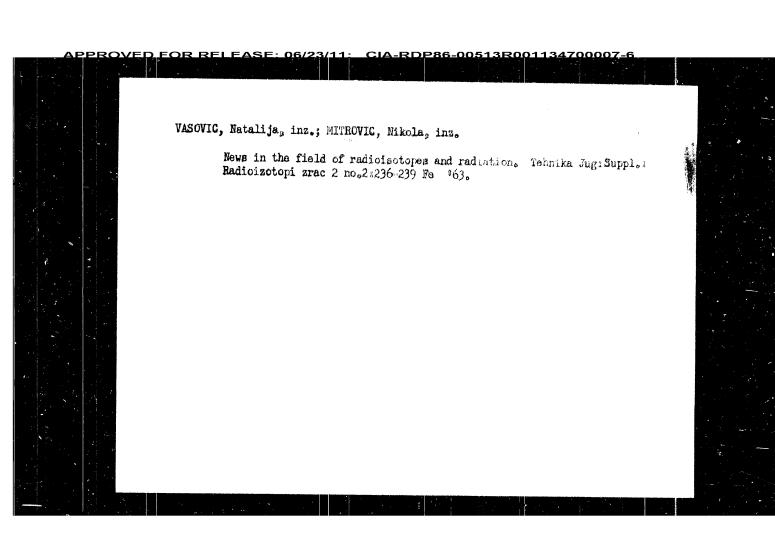


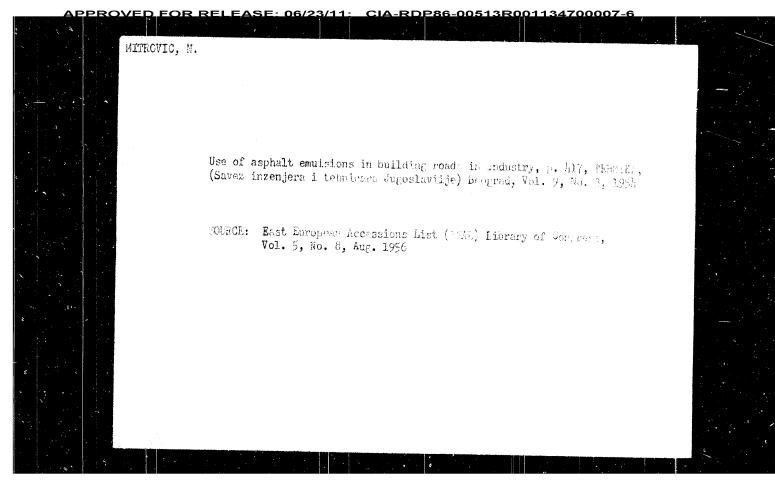


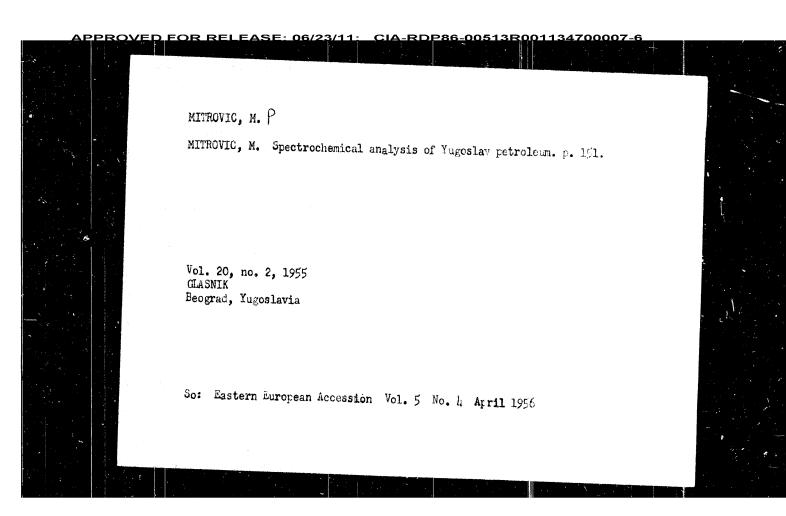


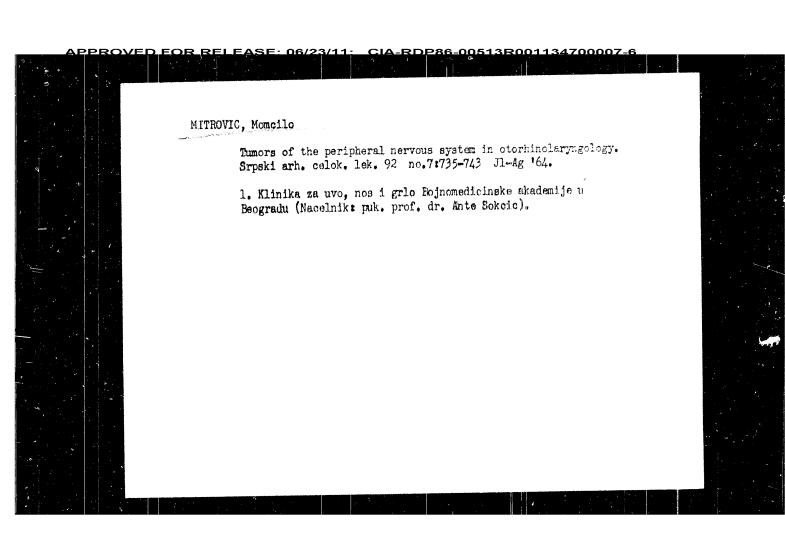


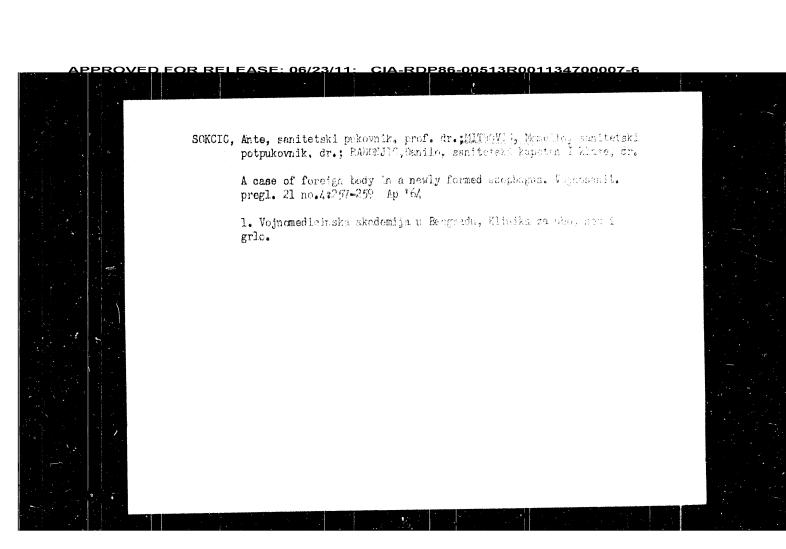










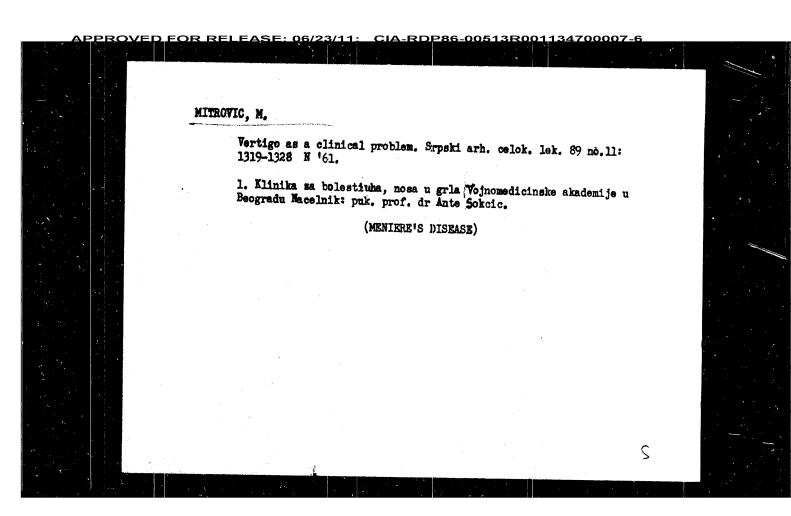


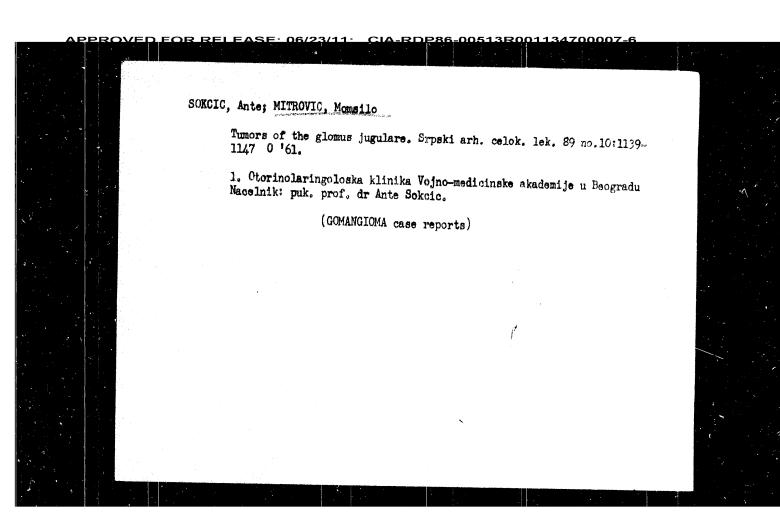
SKOKLJEV, Antonije; MITROVIC, Momeilo; GRCIC, Aleksandar

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puk. prof. dr. Safet latifica. Klinika sa belesti uva, nosa i
grla Vojnomedicinska akademije Jugeclovenska marodne armije
u Beogradu Nacelnik; puk. prof. dr. Ante Sekcio.

(CAROTID BODY TUMOR)





MITROVIC, Momello, sanitetski major, dr.; MANOJILOVIC, Cira, sanitetski
potpukovnit, dr.

Otorhinolaryugological findings in radar station personnel. Voj.san.
pregl. 18 no.21173-176 F '61.

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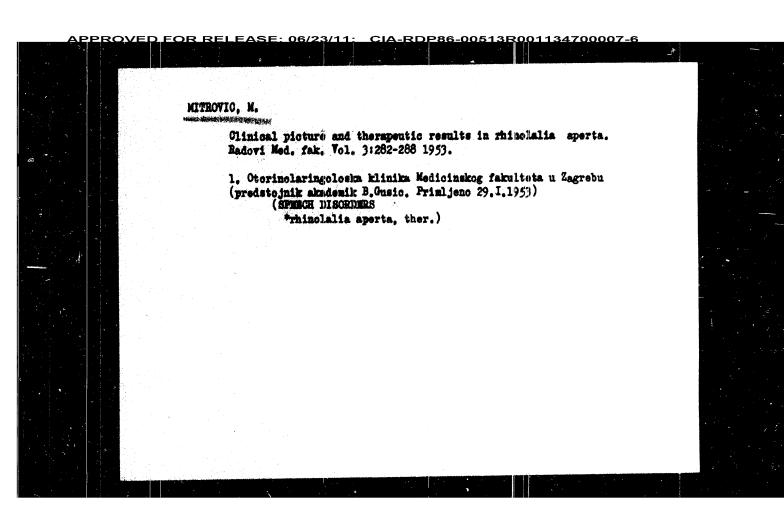
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STOJANOVIC, V.; MITROVIC, M.; RASOVIC, LJ.

Clinical and therapeutic experiences in cardiospass. Acta chir.
iugosl. 1 no.1-2: 2-12 1959.

1. II. Sir klinika Med. fakulteta u Beogradu. (Upravnik prof. dr.
Stojanovic)

(QAEDIOSPASM, surg.)



APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700007-6

YUGOSLAVIA

Mitar MITROVIC, Zivota GJORGJEVIC and Dragoljub NOVICIC, Surgical Department of City Hospital (Hirursko odeljenje Gradske bolnice) Chief (nacelnik) Prof Dr Mitar MITROVIC, Belgrade.

"Ulcerative Colitis."

Belgrade, Srpski Arhiv za Celokupno Lekarstvo, Vol 91, No 3, Mar 63; pp 301-304.

Abstract [French summary modified]: Case report - ulcerative colitis in 31-year-old nurse, 7 years of progressive incapacitation, total colectomy with ileorectal anastomosis brought amazingly rapid recovery; 3 months' postoperative she had gained 11 Kg. and had very normal digestive and excretory function; felt well. Two photographs of operative specimen; 2 Yugoslav and 13 Western references.

1/1

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700007-6

YUGOSLAVIA

MITAOVIC, Mitar, and NOVICIC, Dragoljub, Surgical Department (Hirureko Odeljenje), City Hospital (Gredska Bolnica), Belgrade.

"Traudatio Rupture of the Musculus Rectus Abdominis."

Belgrade, Srpari Arhiv za Celokupno Lekarstvo, Voj 90, No 12, December 1962, pp 1217-1219.

Activate: Authors' German summary/ Spontaneous subcutaneous rupture of the musculus rectus abdominis is a rare occurrence and then mainly in young males. The injury occurs indirectly, caused by uncoordinated strong and oudden muscle traction. The authors are of the opinion that the primary suture of the muscle is more airisable treatment than conservative therapy or operative evacuation of the hematoma, as most authors agree.

References to four recent US and French works.

11/1

YUGOSLAVIA

Mitar MITROVIC and Dragoljub NOVICIC, Department of Surgery, City
Hospical, Head (Nacelnik) Prof Dr Mitar MITROVIC, Belgrade.

"Hepatic Hemangioma."

Belgrade, Srpski Arhiv ta Celokupno Letaistvo, Vol 90, No 10, Oct 62;
pp 979-982.

Abstract [German summary modified]: Case of multiple liver hemangioma
in woman aged 50; unspecific mainly shdominal symptoms for 5 years;
bood postoperative course with discharge 15 days after excision.

Fhotograph of specimen; 3 Western references.

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